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Moura, A.M.S., da Silveira, M.A.C., Miranda, V.E.V.L. et al. (2026) Training of dental students in the care of anxious adolescents through cognitive behavioral therapy: an exploratory study. Journal of Dental Education. ISSN: 0022-0337

https://doi.org/10.1002/jdd.70258

Training of dental students in the care of anxious adolescents through Cognitive Behavioral Therapy: an exploratory study

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Support: This study was financed in part by the PROPESQI.

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Abstract

Objectives: The aim of this study was to evaluate students' perceptions regarding training in and the use of a Cognitive Behavioral Therapy (CBT) resource in clinical practice. Methods: This exploratory study, conducted in 2023 and 2024, is part of a larger project "Empathy", developed in an Adolescent Clinic, a curricular component of the School of Dentistry at a public university in northeastern Brazil. The students' training included theoretical classes and supervised clinical application of a digital resource based on CBT. The resource was prepared by the authors in a previous study and consisted of cards containing information about dental procedures. The CBT resource was sent by the students to the patients via messaging apps. After the students' training and clinical application of the resource, the undergraduate students completed a questionnaire made available through Google Forms in order to evaluate the training and materials used in the CBT approach. Results: It was found that most students considered the guidelines on the CBT resource "completely enlightening" (73.1%), demonstrating understanding of the material. In the clinical setting, 73.1% rated the in-person guidance as "completely satisfactory" and 80.8% approved of the support via messaging app. Furthermore, 92.3% felt able to apply CBT, although some suggested the need for more practical training and theoretical support material. Conclusion: In general, the students' perceptions of the training were satisfactory, as reflected in their understanding of the information provided, satisfaction with the CBT resource, and confidence in using this technique in approaching anxious adolescent patients.

Keywords: Education, Dental; Adolescent; Cognitive Behavioral Therapy; Dental Anxiety.

INTRODUCTION

The academic training of dentists focuses predominantly on technical skills and procedures, with little focus on developing communication skills[1]. Likewise, the identification and approach of patients with anxiety related to dental treatment are not prioritized. Curricular matrices generally lack active multidisciplinary training, especially in behavioral approaches, which influences the professional's ability to recognize and adequately deal with patients in this condition. This weakness in professional training can make the care of adolescent patients especially challenging.

According to the World Health Organization (WHO)[2], adolescence corresponds to the period between 10 and 19 years of age and is a transitional phase of development, in which young people face a series of physical, cognitive, and psychosocial changes[2]. During this period, puberty, fluctuations in hormone levels and emotional instability are closely linked. As a result, adolescents often experience a range of feelings, including loneliness, low self-esteem, anxiety and sadness, and may feel misunderstood in their environment[3].

In the dental environment, adolescent anxiety is closely related to factors such as parental education, previous experiences at the dentist, history of dental pain and cavities[3,4]. Recent studies indicate that the global prevalence of anxiety related to dental treatment among children and adolescents is 23.9%[5]. In a study carried out in Recife, a prevalence of anxiety related to dental treatment of 22.8% was found among adolescent patients[6]. In this context, a professional trained to apply psychological approach techniques and with clearer communication is essential for the success of dental care, since this emotional condition influences the patient's attendance at appointments,

collaboration with the dentist during treatment and, consequently, favors better oral health[4].

The Cognitive Behavioral Therapy (CBT) is a psychological approach based on breaking the cycle of how thoughts, feelings, and behaviors influence each other in those people who are anxious[3,7]. CBT has been well-accepted for the psychological treatment of situation-related anxiety and specific phobias, proving effective in assessing, controlling, and modifying negative thoughts, emotions, and behaviors experienced by people with dental anxiety, including adolescents[4,8,9]. CBT can be delivered in a variety of formats to reduce dental anxiety in adolescents including therapy delivered online by psychologists[10] or guided self-help resources delivered by dental professionals.[11]

Despite the growing body of literature on the effectiveness of CBT to reduce dental anxiety, there is a paucity of evidence on how to provide training to dental students in this approach. The aim of this study was to evaluate students' perceptions regarding the training and the use of a CBT resource in clinical practice.

MATERIALS AND METHODS

This study is part of a larger project entitled "EMPATHY - Assessment of Cognitive Behavioral Therapy Resources in the Approach to Child and Adolescent Patients in the Dental Office," carried out at a dental school in Recife, Brazil, which was approved by the Ethics Committee, under protocol n° 5,982,815.

The training was carried out at the Adolescent Clinic, with students in the fourth year of the dentistry course. The sample consisted of 26 dental students, with voluntary participation, and 14 anxious adolescent patients/their guardians. The dental students worked in pairs, referred to as "oral health teams."

The material adopted for the approach to dental anxiety among adolescent patients was a resource based on CBT, entitled “Your Smile, You Take Care of It”.[12] This resource, a self-help guide, consists of 14 messages with information about dental care, clarifications about procedures, as well as suggested strategies for dealing with anxiety-provoking situations. The resource is presented in digital format and can be sent via social networks and messaging applications (Figure 1)

The resource adopted to address dental anxiety in adolescent patients was based on “You Take Care of Your Smile.”[12] The resource, which was developed as a self-help guide, consists of 14 messages presented digitally with information about dental care, clarifications about procedures, and suggested strategies for dealing with anxiety-provoking situations, and can be shared via social media and messaging apps (Figure 2).

Dental students were prepared to use the CBT resource through classroom activities, and a theoretical class with basic information about CBT and guidelines for using the suggested resource. Furthermore, there was practical monitoring during the four-month period of patient care, during which researchers were available to provide clarification and monitor the adoption of the resource. Thus, the training of dental students included a theoretical stage to learn about the suggested strategy, followed by clinical application under supervision and final evaluation.

Prior to the implementation of "Your Smile, You Take Care of It,” adolescents with anxiety related to dental treatment were identified through the Dental Anxiety Question (DAQ) and randomly assigned, by drawing lots, to the oral health teams.

Oral health teams were instructed to create chat groups on WhatsApp*, called “DENTIST” (Figure 2), for weekly communication with patients and their guardians. Interaction via messaging apps took place to confirm scheduled appointments and also to

send the resource based on CBT. Fourteen groups were created with five participants: two dental students (oral health team), a patient, a guardian and a researcher.

CBT is based on five areas: thoughts, emotions, physical reactions, and behaviors. CBT resources aim to change unpleasant or frightening thoughts by providing clarifying information and, in this way, also change negative emotions or reactions and uncooperative behaviors. Thus, the CBT resource was used following a protocol, in which information was sent to the group to clarify doubts and reduce patient anxiety, according to each week's dental procedure. Thus, throughout the treatment, on a weekly basis, the students used the CBT resource according to the procedure that would be carried out the following week. Furthermore, they also encouraged patients to express their opinions and perceptions about the treatment through audio, text, or video messages.

At the end of the study, to evaluate the training, the oral health teams answered a structured questionnaire, applied via Google Forms, consisting of 7 questions, 6 objective and 1 subjective. The questions were organized into three groups according to the topic addressed, namely: (1) general assessment of the guidelines and explanations provided in the classroom regarding the proposed CBT resource; (2) understanding of CBT and (3) understanding of the guidelines provided throughout the treatment carried out. In addition, students were also asked, through an open-ended question, to provide suggestions for improving training in the use of the resources.

Quantitative data were organized descriptively through graphs and qualitative data were analyzed using Bardin's Content Analysis (2011).[13] The researchers explored the collected material by reading and coding the answers to the open questions, which were then interpreted using the theoretical framework, producing a synthesis that combined similar content, by identifying recurring patterns and themes. This allowed the questions to be grouped: (1) overall assessment of the guidance and explanations given in the

classroom regarding the proposed CBT strategy; (2) understanding of CBT; and (3) understanding of the guidance provided throughout the treatment.

RESULTS

In general, the students' perception of the training was satisfactory, as reflected in their understanding of the information provided, satisfaction with the CBT resource and confidence in using this technique to approach anxious adolescent patients.

The dental students considered the guidelines to be "completely enlightening" (73.1%) and "enlightening" (26.9%). They also reported having "understood" (42.3%) or "completely understood" (57.7%) the information provided about CBT and the use of the proposed material. A comment from a dental student is presented below.

> *"I believe there's nothing to change; everything was well presented and explained. The cards were very didactic and greatly facilitated communication with patients. It's up to us, as participants, to study this approach further and try to incorporate it into our daily practice in other clinics as well, because practice builds confidence."*

Regarding the guidance provided in person in the clinical environment, the majority (73.1%) of students considered it "completely satisfactory" for understanding how to use the material, followed by "satisfactory" (26.9%). Likewise, the majority (80.8%) considered the guidance provided through the messaging application "completely satisfactory"; followed by "satisfactory" (19.2%).

When asked about whether they felt confident in applying the CBT resource throughout clinical treatment, the majority (92.3%) considered themselves capable; only one student (3.8%) did not consider themselves capable of using CBT, and one student (3.8%) reported being "indifferent."

> *"Our patient had a level of anxiety that made it difficult for her to communicate with us. As we implemented the intervention, speaking in advance in the WhatsApp group, sending explanations of the procedures, and building rapport, we changed the relationship and, consequently, the process of facilitating care."*

Regarding the doubts that arose during the application of the material, the majority (53.8%) considered that they were "fully clarified," a portion (34.6%) considered them "clarified," and three students (11.5%) reported that they still had doubts.

> "The proposed cards were easy to understand, objective, and attractive, so using them made our communication with the patient more effective and illustrative."

When asked about suggestions to improve training aimed at applying the CBT strategy to address anxiety, dentistry students considered training important in their relationship with adolescents, facilitating interaction and establishing better communication and cooperation. However, one student suggested allocating more time for practical training in the application of CBT. Another student reported the importance of providing additional theoretical material on CBT and its application in clinical practice.

It is noteworthy that when the CBT strategy proposed for use with adolescent patients was presented to students in the classroom, high interest and involvement were observed. When informed that student participation would be voluntary, acceptance was 100%.

Regarding the students' suggestions for improving the training, there was good acceptance and understanding of the suggested approach and the proposed material. Some points were suggested for improving the training, such as the development of theoretical support materials for the students, in addition to more time for practical training.

Overall, the responses to the subjective questions were positive. However, in specific cases, there was difficulty in communicating directly with the adolescents, since the phone used in the interaction belonged to their parents.

In the end, when evaluating the proposed CBT strategy, most students (90%) considered it excellent or good (Graph 1). No student rated it as bad or terrible. Most students reported that the CBT strategy improved communication, cooperation, and the patient-provider relationship (Table 1).

DISCUSSION

Dentistry students showed interest in innovative strategies for approaching patients, with full participation in the proposed training. During this period of professional training, the adoption of CBT as an approach to patient care can contribute to better humanistic preparation and greater interaction between professionals and patients. The use of technological tools such as messaging applications and virtual teaching materials also stands out, adapting to new means of human interaction, especially among younger people.

It is noteworthy that the resource used in this study was well accepted by oral health teams, as also reported in the study by Porrit et al. (2016)[11]. These authors developed a CBT resource aimed at reducing anxiety about dental treatment in children and adolescents and evaluated the cost-effectiveness of the method. The results demonstrated acceptance by dental professionals for several reasons, including adherence and interest on the part of patients, assistance in communication between dentists and anxious patients, in addition to the professionals' interest in applying the therapy.

Dentistry students with practical experience in situations involving the care of anxious patients have the opportunity to further develop important skills such as communication, the application of emotional control strategies and the adoption of techniques such as CBT, increasing familiarity with the challenges of clinical care and promoting the humanization of care, in addition to improving the professional-patient relationship and treatment results[1,4].

The active involvement of the professional in the learning process regarding the use of CBT-based resources is necessary to ensure the effectiveness of these practices in dental care. The professional committed to learning acquires the necessary technical knowledge and develops important interpersonal skills needed to deal with anxious patients more effectively.

This engagement enables a better understanding of CBT strategies, promoting their appropriate application and adaptation to the individual needs of patients. In addition to students' theoretical learning, as found in the study of Marshman et al (2016)[15], professionals who are involved in the learning process tend to feel more confident and prepared, which contributes to a positive clinical experience for both the professional and the patient.

Considering that educational materials can be an important tool for dental students and professionals in managing anxious patients, a manual based on CBT

resources is currently being developed. This manual aims to serve as a practical guide, containing clear and accessible information on CBT strategies, guidelines for their application in the clinical context, and tips for empathetic communication, as demonstrated in the study conducted by Marshman et al. (2023)[15].

Strategies that integrate theoretical and practical training, alongside the use of the manual, are essential to enhance dental practice in addressing patient anxiety. In addition to training professionals and students, these initiatives promote a more humanized approach, contributing to an improved quality of service provision and, consequently, to better oral health outcomes within this population.

We observed that learning through experience, with the continuous interaction between theory and practice, provided students with an excellent opportunity. Throughout patient care, it was possible to better apply CBT resources and ultimately achieve very satisfactory results from the students' perspective. The monitoring by researchers (faculty members and PhD students) throughout the patient care period was also beneficial.

According to Lave and Wenger (1991)[16], individuals learn not only through task execution but also through social interaction with specific subjects. In this sense, experiential learning provides teachers and students with an understanding of the importance of creativity and interaction in the learning process, leading to students' personal and immersive involvement in the subject matter, as well as making them effective participants in learning. This involvement, in turn, fosters a sense of pleasure in the learning process, the pursuit of knowledge, greater interaction and engagement, as well as better collaboration among students. (Pellas et al., 2019).[17]

As limitations of this study, it should be noted that it was developed in only one dental school, included only one patient cohort and involved a short follow-up period for the adolescents.

CONCLUSION

Students were interested and participated in the training, reporting increased confidence and the development of skills to apply CBT strategies when approaching anxious patients. The students' perceptions indicated that the technique, through experiential education, helped in communication with patients, constituting a more

humanized and effective approach to interaction, thus favoring greater cooperation and a better patient-provider relationship.

Thus, it is concluded that training for the use of CBT-based resources can be a valuable strategy in the training of dentistry professionals, providing higher-quality patient care.

Disclosure: The authors declare no conflicts of interest.

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Figure 1 - CBT Resource – Your smile, You Take Care of It.

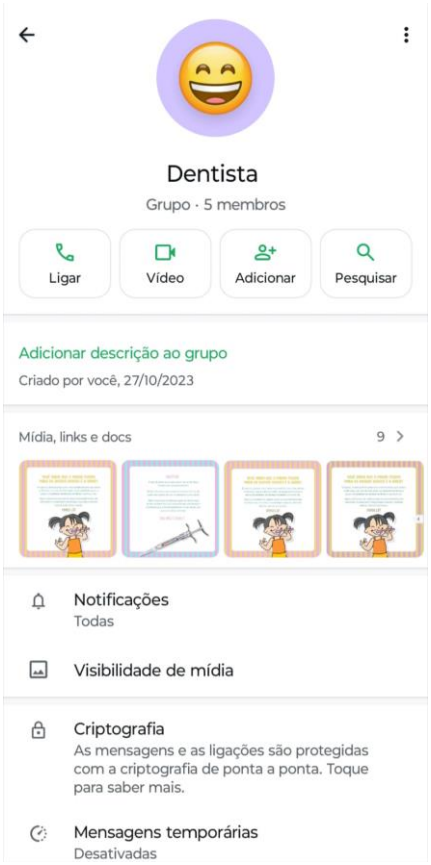
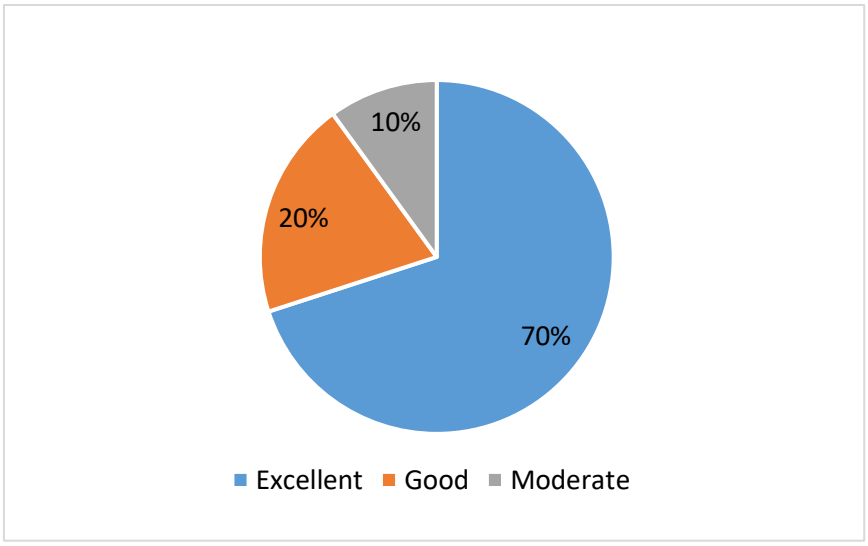


Figure 2 – Group created in the messaging application.



Graph 1 – Evaluation of the CBT strategy for approaching adolescent patients with anxiety related to dental treatment.

Question	Yes, a lot (%)	Yes, moderately (%)	Yes, a little (%)	No (%)
Was the application of the CBT strategy effective in facilitating communication with your patient?	50	45	5	0
Has the application of the CBT strategy led to an enhancement in the patient-provider relationship?	55	25	20	0
Did CBT improve patient cooperation?	58	21	21	0

Table 1 - Distribution of the CBT strategy assessment by dental students (n=24)